

## **SECTION 03303**

### **CONCRETE FOR WATER LINES, SANITARY SEWER MAINS, REPURIFIED WATER LINES AND APPURTENANCES**

#### **PART 1 – GENERAL**

##### **1.1 SCOPE OF WORK**

The work covered by this Section relates to concrete blocking, cradles, anchors, caps, protection, and/or encasement for water and sanitary sewer line appurtenances at the locations shown on the Plans or as directed by the Engineer, and in accordance with the Standard Detail Drawings.

##### **1.2 STANDARD**

The standard for this work shall be ACI 301-72 Specifications for Structural Concrete for Buildings (as revised) and as modified by the following supplemental requirements:

###### **A. SECTION 3.2 STRENGTH**

The minimum compressive strength for Class “B” concrete shall be three thousand (3,000) pounds per square inch in twenty-eight (28) days.

###### **B. SECTION 3.4.1 DURABILITY**

All concrete exposed to weather shall be air entrained. All concrete that will be underground need not be air entrained.

###### **C. SECTION 3.5 SLUMP**

Concrete shall be proportional and produced to have a slump of three (3”) inches with a one (1”) inch tolerance.

###### **D. SECTION 3.7 ADMIXTURES**

Air entrainment, mandatory for concrete exposed to weather, may be used. A water reducing admixture (retarding, normal, or accelerating, depending on placing temperature) may be used if approved by the Engineer.

###### **E. SECTION 5.2.1 REINFORCING STEEL**

Yield strength of reinforcing steel shall be sixty thousand (60,000) psi.

##### **1.3 RELATED WORK SPECIFIED ELSEWHERE**

Refer to other Sections of these Specifications for work related to this Section.

## **PART 2 – PRODUCTS**

### **2.1 CONCRETE**

Class “B” concrete for the water and sanitary sewer line appurtenances listed herein shall conform to the following:

#### **A. CEMENT**

Cement shall be Portland cement of a brand approved by the Engineers, and shall conform to “Standard Specifications for Portland Cement”, Type 1, ASTM Designation C150, latest revision.

#### **B. FINE AGGREGATE**

Fine aggregate shall be clean, hard, uncoated sand conforming to ASTM Designation C33, latest revision, “Standard Specifications for Concrete Aggregate”.

#### **C. COARSE AGGREGATE**

Coarse aggregate shall consist of clean, hard, dense particles of stone or gravel conforming to ASTM Designation C33, latest revision, “Standard Specifications for Concrete Aggregate”. Aggregate shall be well graded between one and one-half (1½”) inches and number four (4) sieve sizes.

#### **D. WATER**

Water used in mixing concrete shall be clean and free from organic matter, pollutants, and other foreign materials.

#### **E. READY-MIX CONCRETE**

Ready-mix concrete shall be secured only from a source approved by the Engineers, and shall conform to ASTM Designation C94, latest revision, “Specifications for Ready-Mix Concrete”. Before any concrete is delivered to the job site, the supplier must furnish a statement of the proportions of cement, fine aggregate, and coarse aggregate to be used for each mix ordered, and must receive the Engineer’s approval of such proportions.

### **2.2 STEEL REINFORCING**

Reinforcing bars shall be intermediate grade steel conforming to ASTM Designation A15, latest revision, “Standard Specifications for Billet Steel Bars for Concrete Reinforcement”. Bars shall be deformed with a cross sectional area at all points equal to that of plain bars of equal nominal size.

## **PART 3 – EXECUTION**

### **3.1 GENERAL**

Place concrete appurtenances at locations shown on the Plans and in accordance with Standard Detail Drawings.

END OF SECTION 03303